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```
int n=5
for(int i=0; i<n ; i++)
 {
   S.o.println("*");
 }.
```

i = 0 *

1 = 1 *

i = 2 *

i = 3 *

i = 4 *

```
int n=5;
for(int i=0; i<n ; i++)
{
  for(int J=0; J<n ; J++)
  {
    S.o.p("*"+" ");
  }
  S.o.println();
}
```

Hint (1 2 3 2 1)

j=0 j=1 j=2 j=3 J=4

i=0 * * * * *

j = 1 * * * * *

i=2 * * * * *

i=3 * * * * *

i=4 * * * * *

* While Loop:-

For	While
- No. of iteration is known - In declaration we can provide initialization and operation	- No. of iteration is not known - In declaration we cannot provide initialization & operation
Syntax	Syntax

eg
```
int a = 1;
int b = 5;
while (a <= b)
{
    S.o.pln(a);
    a++;
}
```

1	
2	<
3	=
4	
5	

```
int a = 5;
int b = 1;
while (a >= b)
{
    S.o.pln(a);
    a--;
}
```

5	
4	>
3	or
2	>=
1	

* DO-While

```
do
{
    // body of do while
}
while(condition);
```

While	Do-While
- Entry checked Loop - Executes only when the condition is true - Syntax	- Exit Checked Loop - Executes ~~when~~ once even when condition is false - Syntax

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Interview Questions.

if-Statements

Switch Statement

- What is the use of break keyword?
  1- Separate options in Switch statement
  2- Terminate Loop execution

- What is the use of default in Switch statement?
  It executes When given Choice is Invalid.

- Is it mandatory to write default in Switch Statement?
  No it is optional case.

- What is the use of Case Keyword?
  It is used to declare options inside a Switch.

- Can We declare 2 Case With Same Value(labe()?
  No. it will Cause Compile time Error.

- Explain the syntax and working of for loop?
  Syntax + Example
- Difference blw for and while
- Difference blw while and do-while?

* Methods:- A method is a named block of code that is reusable in nature.

Syntax :-
The Syntax for creating a method consist of 2 parts:-
  i) Method Declaration
  ii) Method Definition.

<access.modifier> <Modifier> returntype methodName(args)
Method Declaration

{
Method Definition
}

- How to Create Method
A method should always be declared directly in the class body

Eg. Class P1
{
  static void Test()
  {
    S.o.pln("Executing test() ---");
  }
  P. S. V main(string[] args)
  {
    S.o.pln("Prog starts")
    test();
  }
}

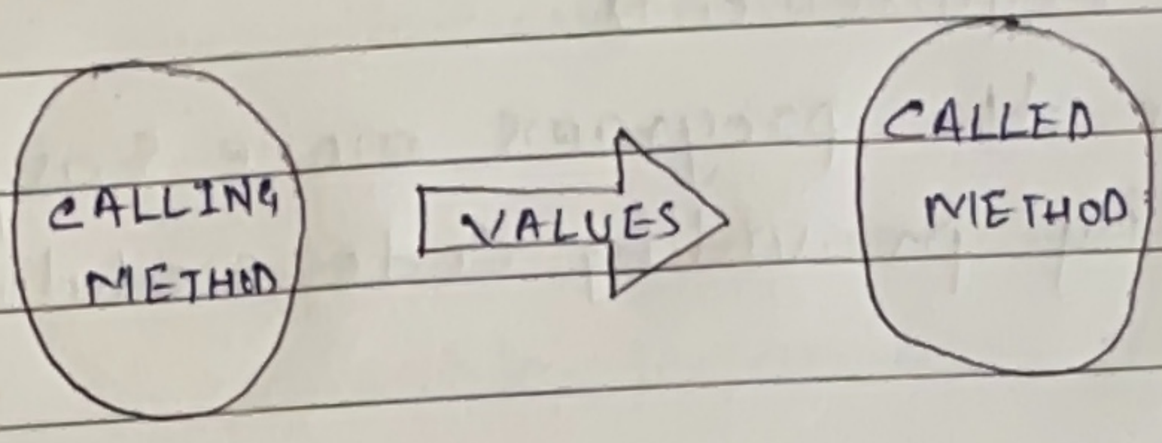
- A methods get executed only when it is called.
- We can call the same method multiple times.
- In a Class We can declare multiple methods Based on our requirements.
- Methods make the programs more Easy to read, Maintain and modify By providing Code modularity.

Eg

```
Class P5
{
   Static void test()
   {
      System.out.println("test starts");
        Sopln("test ends");
   }
   Static void disp();
   {
      S.o.pln("dist starts");
      test();
      S.o.pln("disp ends");
   }
   P s v main(String[] args)
   {
      System.o.pln("main starts");
      disp();
      S.o.pln("main Ends");
   }
```

PASSING VALUES :-

- It is the concept of Sending Values from Calling method to Called Method.




```
class P6
{
  static void test(int a)          ---> Formal Arguments
  {
    S.o.pln ("Value : "+a);
  }
  P.s.v.main(String[] args)
  {
    test(10);                      ---> Actual Arguments
  }
}
```

2.

- We can pass values with the help of arguments.
- Formal Arguments :- Variables Created in method declaration
- Actual Arguments :- Values provided in Method call.
- If necessary The programmer can pass multiple values by declaring multiple Arguments.
- When passing multiple values ~~if it~~ The formal and actual arguments should be separated using (,) comma.
- It is the programmers responsibility to provide args of correct type, length and Sequence.
- Passing values helps programmer to provide input values to a method.

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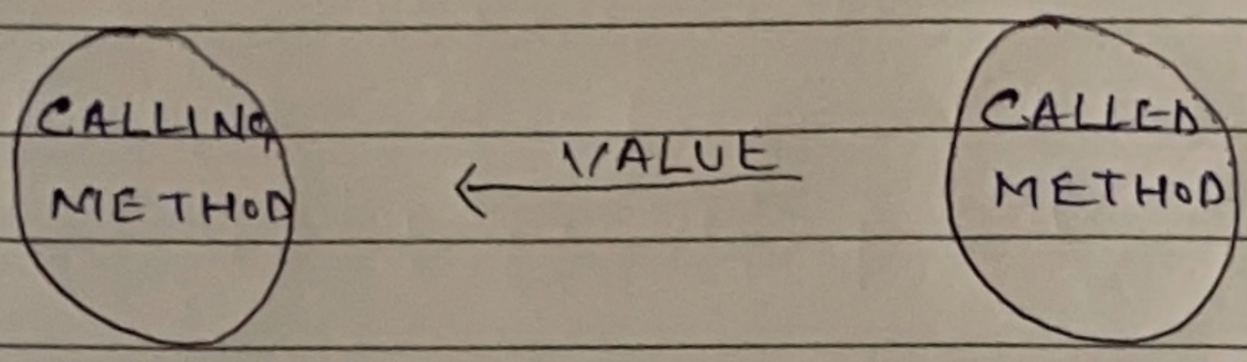
RETURNING VALUE :-

- It is the Concept of Sending a value from Called method back to Calling method.



- To Return a value the programmer has to follow 3 steps :-
  i) Declare return type based on value to be returned.
  ii) Return a Compatable Value using "return' keyword
  iii) Capture the returned value inside calling method.

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Ditter type of programs

1] . Number programs
2] Pattern "
3] Array "
4] Strong "
5] 2D Array "

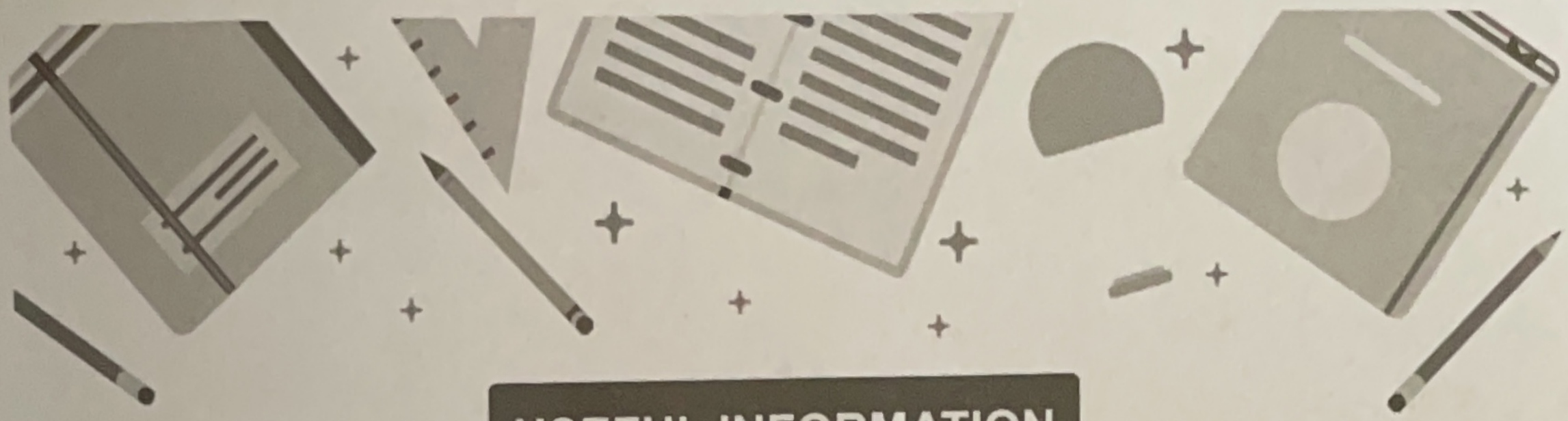
Fundamental Concepts to Learn Coding in any Lang.

1] Variables
2] Operators
3] Control stmnts / flow control stmnts
4] looping stmnts
5] Functions / Method.

Variables:- are containers which are used to store d/value

datatype Variable Name;

int a=10 ✓
int a,b,c; ✓
int a, b=10, c; ✓
ina, double d, Gbcar G; X
int x; double y; char z;



USEFUL INFORMATION

MULTIPLICATION TABLE

1	2	3	4	5	6	7	8	9	10	11	12
2	4	6	8	10	12	14	16	18	20	22	24
3	6	9	12	15	18	21	24	27	30	33	36
4	8	12	16	20	24	28	32	36	40	44	48
5	10	15	20	25	30	35	40	45	50	55	60
6	12	18	24	30	36	42	48	54	60	66	72
7	14	21	28	35	42	49	56	63	70	77	84
8	16	24	32	40	48	56	64	72	80	88	96
9	18	27	36	45	54	63	72	81	90	99	108
10	20	30	40	50	60	70	80	90	100	110	120
11	22	33	44	55	66	77	88	99	110	121	132
12	24	36	48	60	72	84	96	108	120	132	144

Table of avoirdupois Weight

(Used in weighing all articles except drugs, gold, silver and precious stones)

16 drams = 1 ounce (oz.)
16 ounces = 1 pound (lb.)
25 pounds = 1 quater (qr.)
100 pounds = 1 hundred weight
2000 pounds = 1 ton (T.)
2240 pounds = 1 long ton (L.T.)
(13¼ cubic feet of air weights = 1 pound)

Table of Miscellaneous Measures

12 units = 1 dozen
12dozen = 1 gross
12 gross = 1 great gross
20 units = 1 score
4 inches = 1 hand

Atmospheric pressure is 14.7 ibs. per square inch at sea level.

Table of Square Measures

144 square inches = 1 square foot
9 square feet = 1 square yard
272 square feet = 1 square rod
40 square rods = 1 rod
160 square rods = 1 acre
640 acres (sq.mi.) = 1 square mile

A square having an area of 1 acre, measures 208. 71 feet on each side.

CONVERSION TABLE

LENGTH

1 meter (m) = 100 cm	=	1,000 mm
1 millimeter (mm)	=	.001 m
1 centimeter (mm)	=	.01 m
1 decimeter (dm)	=	.1 m
1 decameter (dkm)	=	.10 m
1 hetometer (hm)	=	.100 m
1 kilometer (km)	=	1,000 m

CAPACITY

1 Liter (l) = 100 cl	=	1,000 ml
1 milliliter (ml)	=	.001 l
1 centiliter (cl)	=	.01 l
1 deciliter (dl)	=	.1 l
1 decaliter (dkl)	=	.10 l
1 hectoliter (hl)	=	.100l
1 kiloliter (kl)	=	1,000 l

WEIGHT

1 gram (g) = 100 cg	=	1,000 mg
1 milligram (mg)	=	.001 g
1 centigram (cg)	=	.01 g
1 decigram (dg)	=	.1 g
1 decagram (dkg)	=	.10 g
1 hectogram (hg)	=	.100 g
1 kilogram (kg)	=	1,000 g

METERS	YARDS	INCHES
1.000	1.093	39.37
.914	1.000	36.00

CENTIMETERS	INCHES	FEET
1.00	.394	.0328
2.54	1.000	.0833
30.48	12.000	1.000

KILOMETERS	MILES
1.000	.621
1.609	1.000

GRAMS	OUNCES	POUNDS
1.00	.035	.002
28.35	1.000	.0625
453.59	16.000	1.000
1,000.00	35.274	2.205

KILOGRAMS	OUNCES	POUNDS
1.000	35.274	2.205
.028	1.000	.0625
.464	16.000	1.000

LITERS	PINTS	QUARTS	GAL.
1.000	2.113	1.057	.264
.473	1.000	.5	.125
.946	2.000	1.000	.25
3.785	8.000	4.000	1.000

Table of Circular Measures

60 seconds(") = 1 minute (')
60 minitues = 1 degree (°)
90 degrees = 1 quadrant
360 digress = 1circumference

A degree of the earth's surface on a meridian equals approximately 69 miles.

Table of Apothecaries Measures

60 minims = 1 fluid dram
8 fluid drams = 1 fluid ounce
16 fluid ounces = 1 pint
8 pints = gallon

Table of Dry Measures

2 pints (pt.) = 1 quart (qt.)
8 quarts = 1 peck (pk.)
4 pecks = 1 bushel (bu.)
1 cord = 128 cu. ft.

Table of Liquid Measures

4 gills (gl) = 1pint (pt.)
2 pints = 1 quart (qt.)
4 quarts = 1 gallon (gal.)
31½ gallons = 1 barrel (bbl.)
2 barrels = 1 hogshead (hhd.)

1 cubic of water weights approximately 62½ pounds.

Table of Surface Measures

144 sq. in. = 1 sq. ft.
9sq. ft. = 1 sq. yd.
30¼ sq.yds. = 1 sq. rod
160 sq. rods = 1 acrc

Table of Trey Weight

24 grams (gm) = 1 penny-weight
20 penny-weights = 1 ounce (oz)
12 ounces = 1 pound (lb.)

Table of Linear Measures

12 inches = 1 foot
3feet = 1 yard
16½ ft. (5½ yds.) = 1 rod
660 feet = 1 furlong
320 rods (5280 ft.) = 1 mile

Table of Cubic Measures

1728 cubic inches = 1 cu. foot
27 cubic feet = 1 cu. yard
128 cubic feet = 1 cord of wood or 1 perch of stone

NOTE: A cord of wood is equivalent to a pile 8 feet long, 4 feet wide and 4 feet high, A perch of stone or bricks is 16½ feet long 1½ feet wide and 1 foot high.